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14 Mar 2006

Mr. Frank Cheng
Remedial Project Manager
California Department of Toxic Substances Control
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SUBJECT: NAVY RESPONSE TO DTSC'S COMMENT LETTER (DATED 03 FEBRUARY 2006) ON THE SUMMARY REPORT FOR GROUP III POTENTIAL RELEASE LOCATIONS (PRL) ENVIRONMENTAL BASELINE SURVEY, FORMER MCAS EL TORO, OCTOBER 2005

Dear Mr. Cheng:

This letter is in response to California Department of Toxic Substances Control's (DTSC's) comment letter (dated 03 February 2006) on the Summary Report for Group III Potential Release Locations (PRL) Environmental Baseline Survey, October 2005 (Enclosure 1). DTSC recommended that the Navy propose additional investigation for PRLs 296 and 297 (for lead), and PRLs 605 and 606 (for arsenic). The Navy agrees with US Environmental Protection Agency (USEPA) that no further investigation is warranted at these locations and therefore does not concur with DTSC's recommendations.

The PRL program was initiated in 2004 to address locations that may have contaminant releases associated with Navy activities. Based on visual inspections, site history, and data reviews these PRL areas lacked the justification to be considered as Locations of Concern in the Environmental Baseline Survey completed in 2003. Since then, the Navy reexamined the PRL areas, looking for evidence of a release. To date, most of the PRL areas have not required further investigation beyond the PRL process.

DTSC requested additional information regarding the salt-bath furnace referenced in PRL 296. Historical data do not support that the salt bath furnace was operational in Building 296; however, as-built drawings of the hangars confirm that furnace pits were located in the Heat Treat Shop in Building 297. The investigation completed at PRL 297 adequately addressed potential releases from the salt bath furnace. The Navy will revise the summary reports for PRLs 296 and 297 accordingly. DTSC's remaining comments may be divided in two categories, lead and arsenic.

The reported lead concentrations at PRLs 296 and 297, cited in DTSC's comments, are not greater than health protective levels and data do not support that lead at these locations is related to CERCLA releases. The Navy's investigation and calculation of site-specific health protective levels is consistent with DTSC policy as applied at other sites (including an Evaluation of Lead Based Hazards in Soil at Former Housing Areas, MCAS El Toro, dated 16 October 2002). The Navy does not concur that additional investigation at these locations is required.

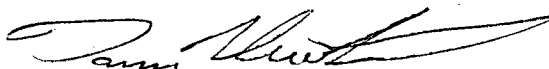
The reported arsenic concentrations at PRLs 605 and 606, though greater than health protective levels, do not pose a significant risk to human health compared to background

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concentrations of arsenic at El Toro. A review of regional geology and geologic principles provides compelling evidence that the reported arsenic concentrations are not anthropogenic; this is further supported by analytical data from the site. The Navy does not concur that additional investigation at these locations is required. Enclosure 2 addresses all of DTSC's comments in detail.

The Navy proposes to resolve this issue at the BCT Meeting on 29 March 2006. Should you have questions or need additional information, please contact Mr. Richard Pribyl, Remedial Project Manager, at (619) 532-0932 or me at (619) 532-0963.

Sincerely,



DARREN NEWTON
BRAC Environmental Coordinator
By direction of the Director

- Enclosures: 1. DTSC's Comment Letter (Dated 03 February 2006) on the Summary Report for Group III Potential Release Locations (PRL) Environmental Baseline Survey, former MCAS El Toro, October 2005
2. Navy Response to DTSC's Comments: PRLs 296, 297, 605, 606

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February 3, 2006

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SUMMARY REPORT FOR GROUP III POTENTIAL RELEASE LOCATIONS (PRLs), ENVIRONMENTAL BASELINE SURVEY, FORMER MARINE CORPS AIR STATION EL TORO

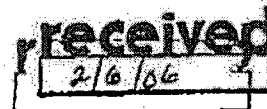
Dear Mr. Newton:

The Department of Toxic Substances Control (DTSC) has reviewed the subject document dated October 2005, prepared by Earth Tech, Inc. The summary report presents the results of investigations conducted at 14 PRLs at the former Marine Corps Air Station El Toro. The report evaluates whether significant releases of hazardous substances have occurred into the environment at these PRLs.

During the 2003 environmental baseline survey, 76 facilities/features were identified as being associated with a potential release of contaminants to the environment. Twenty four PRLs were investigated and 17 were found to have no significant release. The remaining 59 PRLs are being addressed in four groups. Group III is comprised of PRL 295, 296, 297, 315, 324, 326, 369, 380, 390, 605, 606, 643, 655, and PRL Rail Road. Based on our review, DTSC has the following comments.

PRL 296

This site is located within Building 296, in the southwestern quadrant of former MCAS El Toro, and was used as a maintenance hangar. Activities documented for the site include metal plating, degreasing, equipment cleaning, and painting in a variety of separate shops or shop areas within the building. Historical data indicate that various types of processing units were employed, including portable abrasive blast, recycling units, a salt-bath furnace, a heavy-duty furnace, and a dispatch oven.



1. DTSC notes that the investigation did not address potential contamination from the salt-bath oven. The Navy should discuss the location of this equipment, the salt used, the type of treatment performed, the metals treated in the unit, and the potential for contamination from the furnace, salts, process streams, and waste streams of the unit.
2. DTSC is concerned that the nature and extent of lead contamination has not been determined under and around Anodizing Pit 2. Boring HA-2 found lead contamination increasing downward, and the 10-foot below ground surface (bgs) sample exceeded the residential PRG for lead. No deeper boring or nearby boring is available to further evaluate lead content of the soil matrix. The release point and contaminant pathways have not been determined. The Navy should propose additional investigation to characterize the high lead concentration.
3. Section 3, Sampling and Analysis Summary includes discussions of the locations and depths of each sample in relation to the nearby drain, pit, booth or trench it is intended to test. No information is presented concerning the depth bgs of the bottoms or inverts of the subject drains, pits, etc. DTSC is unable to evaluate whether the depth of sampling is appropriate, based on the data presented. The Navy should include the depth of invert for each feature.

PRL 297

This site is located within Building 297, in the southwestern quadrant of former MCAS El Toro, and was used as a maintenance hangar. Activities documented for the site include metal plating, degreasing, equipment cleaning, heat treating, welding, and anodizing in a variety of separate shops or shop areas within the building.

4. DTSC is concerned that the nature and extent of lead contamination has not been determined under and around Tank Shop Pit 1. Boring HA-1 found lead contamination above PRG in the only soil matrix sample collected. No deeper boring or nearby boring is available to further evaluate lead content of the soil matrix. The release point and contaminant pathways have not been determined. The Navy should propose additional investigation to characterize the high lead concentration.
5. Similarly, Boring HA-11 found lead contamination approaching the residential PRG in the deepest sample taken, at 10 feet bgs. No other boring is available to further evaluate the extent of lead contamination in this area. The release point and contaminant pathways have not been determined. The Navy should propose additional investigation to characterize the high lead concentration.

Mr. Darren Newton
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PRL 605

This site is associated with Building 605, in the northeast quadrant of former MCAS El Toro, and used as a maintenance hangar. Activities documented for this site include airplane maintenance and washing.

6. DTSC is concerned that the extent of high arsenic concentration is above background and has not been adequately characterized under and around Boring HA-2. One step out sample is not enough to characterize the lateral extent. The Navy should propose additional investigation.

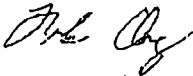
PRL 606

This site is associated with Building 606, in the northeast quadrant of former MCAS El Toro, and used as a maintenance hangar. Activities documented for this site include airplane maintenance and washing.

7. Similarly, DTSC is concerned that the extent of high arsenic concentration is also higher than background and has not been adequately characterized under and around Boring HA-2. The Navy should propose additional investigation.

If you have any questions, please contact me at (714) 484-5395.

Sincerely,



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Enclosure 2. NAVY RESPONSE TO DTSC'S COMMENTS: PRLs 296, 297, 605, 606

The Potential Release Location (PRL) program was initiated in 2004 to address locations that may have contaminant releases associated with Navy activities. Based on visual inspections, site history, and data reviews these PRL areas lacked the justification to be considered as Locations of Concern in the Environmental Baseline Survey completed in 2003. Since then, the Navy decided to reexamine the PRL areas, looking for evidence of a release. To date, most of the PRL areas have not required further investigation beyond the PRL process. Responding to DTSC's comments the Navy reviewed the Summary Reports for PRLs 296 and 297.

Salt Bath Furnace Location. DTSC's comment regarding the salt-bath furnace in PRL 296 originates from the "Survey of Industrial and Oily Waste Discharges to Storm and Sanitary Systems (10 May 1978). The document identifies one salt bath furnace in Building 296; however, the salt bath furnace is marked as "nonuse." Historical data do not support that the salt bath furnace was operational in Building 296. Reviewing the 1944 as-built drawings of the hangars confirm that furnace pits were located in the Heat Treat Shop in Building 297, between the Central Tool Room and Metal Shop. These processes were adequately investigated in PRL 297. The text for Building 296 will be revised to include mention that based on a review of building plans there were no salt-bath furnaces operations.

Based on the above review, salt-bath furnace use occurred at Building 297 (not Building 296) and adequate characterization of the potential releases from these furnaces has been conducted at Building 297. Chemicals of potential concern are cyanide salts and other cyanide-containing compounds. Cyanide was in the analytical suite at Building 297 and was not reported in any of the samples. The text for Building 297 will be revised to specifically mention the salt bath furnace.

Potential Release Scenario at PRLs 296 and 297. A review of the other processes at similar PRLs identified a sample location with results typical of a release from a metal treating process. PRL 297 sample location HA-12 is located near the former location of an anodizing process in Building 297 that would be indicative of a release from metal working operations at these facilities. The laboratory reported concentrations of chromium and copper from HA-12 that appear dissimilar to surrounding data; additionally the laboratory reported an acidic soil pH for location HA-12 that was not consistent with other locations. Therefore, the presence/absence of other COPCs or evidence at a sampling location provides an additional "line of evidence" to determine whether a release governed under CERCLA occurred.

The Navy offers the following information to supplement these PRL 296 and 297 descriptions regarding the reported concentrations of lead.

Anodizing Process Description. The following is an excerpt from the report "Profile of the Fabricated Metal Products Industry"¹ that provides a concise description of the anodizing process:

"Anodizing is an electrolytic process which converts the metal surface to an insoluble oxide coating...Aluminum is the most frequently anodized material. Common aluminum anodizing processes include: chromic acid anodizing, sulfuric acid anodizing, and boric-sulfuric anodizing. The sulfuric acid process is the most common method. Following anodizing, parts are typically rinsed, then proceed through a sealing operation that improves the corrosion resistance of the coating. Common sealants include chromic acid, nickel acetate, nickel-cobalt acetate, and hot water."

Electrolytic processes are usually completed by placing the objects in sequential baths to prepare (clean) and treat the surface to obtain the desired coating. During the transfer of the object from one bath to the other, drippings may fall to the ground. Spills may also occur when the bath solutions are spent and need to be replaced.

PRL 296. The following paragraphs provide the basis for the additional assessment of PRL 296:

- (1) The Building 296 Propeller Shop Anodizing Pit had tank operations including Paint Strip, Alkalai Soak, Alkalai Rinse, Anodize, and Anodize Rinse. The pit extended to a depth of 7.7 feet below ground surface. Drippings and spills in the pit would drain to a depression (i.e., sump) located in the northwest corner of the pit.
- (2) The north end of Building 296 consists of the Propeller Shop, Plastic Shop, Lead-Acid Battery Shop, and Nickel-Cadmium Battery Shop. These areas comprise a combined area of 2/5 of an acre, and encompass 4 soil samples for lead. Soil samples from the Anodizing Pit (sample location HA-2) were collected at 5 and 10 feet bgs, which would capture affects from operations around the surface and releases from the pit bottom.
- (3) These 4 samples have an average lead concentration of 59.5 milligrams per kilogram (mg/kg) with a standard deviation of 72.0 mg/kg. This results in a 95% upper confidence limit of the mean of 130.1 mg/kg, which is below the current screening level of 150 mg/kg.
- (4) No other COPCs were reported at concentrations significantly different than other sampling locations at PRL 296. The soil pH at the sample location in question HA2 was within normal parameters.
- (5) The Navy completed a site-specific analysis for lead exposures at former MCAS El Toro in April 2002, which was submitted for regulatory review and concurrence and finalized in October 2002.²
 - a. DTSC Human and Ecological Risk Division (HERD) uses a default value of 15 micrograms per liter (ug/L) to estimate exposure to lead through drinking water in their LeadSpread 7 model to support the Cal-modified PRG of 150 mg/kg. This default exposure value is based on the California Maximum Contaminant Level (MCL) for lead in water.

¹ US EPA Office of Compliance Sector Notebook Project. 1995. Profile of the Fabricated Metal Products Industry. EPA/310-R-95-007. Washington, DC. September.

² CDM.Evaluation of Potential Lead-Based Hazards in Soil at Former Housing Areas, Former Marine Corps Air Station El Toro, California, 2002, October.

- b. HERD stated that the lead in water exposure value may be replaced with valid monitoring data from the utility supplying water to the site.
 - c. The Navy substituted a lead in water value of 1.2 ug/L (instead of 15 ug/L) based on water data from Irvine Ranch Water District (IRWD) 2001 Water Quality Report and used the site maximum lead in soil concentration of 215 mg/kg.
 - d. The LeadSpread 7 model, using these modified values, indicated that a soil lead concentration of 317 mg/kg would be protective of a child receptor for a residential exposure scenario at the site.
- (6) To update the model to current site conditions, the Navy reviewed the IRWD 2004 Water Quality Report:
- a. Of 74 distribution system lead samples collected by IRWD, one sample had a lead concentration (18 ug/L) that was greater than the MCL (15 ug/L). The analytical results ranged from not detected (ND) to 18 ug/L, with a 90th percentile value of <5.0 ug/L, or ND at the reporting limit of 5.0 ug/L.
- (7) The Navy updated the LeadSpread 7 model for the site, substituting a lead in water value of 2.5 ug/L, (based on 1/2 of the reporting limit [5.0 ug/L]), and a site maximum lead in soil concentration of 155 mg/kg. Using these values in LeadSpread 7 results in a lead PRG of 311 mg/kg that is protective of a residential child exposure scenario.

Observed concentrations of 75.3 mg/kg and 155 mg/kg are not significantly different and do not support "an increasing trend." Furthermore, the reported concentration of lead at 10 feet below ground surface does not compel further investigation because the exposure pathway at this depth is incomplete.

PRL 297. The following paragraphs provide the basis for the additional assessment of PRL 297:

- (1) Lead was detected above screening levels in a soil sample collected from HA1, adjacent to Pit No. 1 in the Tank Shop in PRL 297. Records could not confirm the specific processes that took place in Pit No. 1.
- (2) The as-built drawings show the floor of the pit sloping towards the southeast corner where a 2 ft x 2 ft x 2 ft depression (i.e., sump) was located. The depth to the bottom of the pit varied between 3.5 feet at the north end to 4.25 feet at the south end with 10-inch thick reinforced concrete walls and floor. The Tank Shop and adjacent Central Tool Room and Heat Treat Shop are approximately 1/3 acre combined, and encompass 11 soil samples for lead.
- (3) No other COPCs were reported at concentrations significantly different than other sampling locations at PRL 297. The soil pH at the sample location in question HA1 was within normal parameters.
- (4) Soil samples from Pit No. 1 (location HA-1) were collected at 4 feet bgs, which should capture affects from operations around the surface and releases from the pit bottom.
- (5) These 11 samples have an average lead concentration of 32.2 milligrams per kilogram (mg/kg) with a standard deviation of 62.5 mg/kg. This results in a 95% upper confidence limit of the mean of 69.1 mg/kg, which is below the current screening level of 150 mg/kg.³
- (6) The Navy updated the LeadSpread 7 model for the site, using the 2004 data from IRWD (see explanation in PRL 296 above): substituting a lead in water value of 2.5 ug/L and a site

³ The U.S. EPA Region IX preliminary remediation goal (PRG) for lead in residential soil is 400 mg/kg. DTSC has set and accepted alternative health protective screening levels (for other locations on former MCAS El Toro, other Navy facilities, other clean-up sites, as well as school projects) that are greater than 150 mg/kg. DTSC has recognized that the basis for the screening level of 150 mg/kg is not applicable to all sites and created the LeadSpread model to address conservancies in the exposure assumptions supporting the 150 mg/kg screening level.

maximum lead in soil concentration of 214 mg/kg. Using these values results in a lead PRG of 311 mg/kg, which is protective of a residential child exposure scenario.

Proposed Future Actions Concerning Lead.

PRLs 296 and 297: The absence of other COPCs and/or evidence does not support a finding that a release governed under CERCLA occurred at either PRL. Additionally, the analysis presented above demonstrates that single point lead concentrations less than 311 mg/kg do not present a significant threat to human health and/or the environment. Therefore, further investigation is not warranted at PRL 296 or PRL 297. The Navy proposes to include additional explanation (from above) for both PRL Summary Reports in the results evaluation (section 4.2) and conclusions (section 5) to clarify why a finding of no further investigation is appropriate.

Future Decisions: The Navy proposes to continue using a lead concentration of 150 mg/kg as the first tier analysis. If the Navy encounters soil lead concentrations greater than 150 mg/kg, the Navy will provide a supplementary assessment, review site operations, and evaluate potential release scenarios and available analytical data. The goals of the supplementary analysis are to determine if:

- (1) the release and constituents are governed under CERCLA, and
- (2) if they present a significant threat to human health and/or the environment to warrant further action within the CERCLA process.

Both of the above conditions must be met to compel further action. The Navy proposes using a revised screening level of 311 mg/kg (based on DTSC's lead spread model) in the subsequent summary reports to evaluate the potential health effects reported lead concentrations.

PRLs 605 and 606. After reviewing DTSC's comments regarding the reported concentrations of arsenic in samples from PRLs 605 and 606 the Navy completed a thorough review of the conditions at the two locations.

Geology. A review of regional geology and geologic principles indicates that it is probable that a wide range of arsenic concentrations (naturally occurring) would be present at MCAS El Toro. Arsenic is the main constituent of more than 200 mineral species and can contribute to elevated arsenic concentrations in soils in many mineralized areas: ranging from a few milligrams to greater than 100 mg/kg. The Peninsular Range mining operations provide direct evidence of this. Red Hill Mine is a significant landmark near MCAS El Toro and was mined for mercury during the 1890s. Arsenic, mercury, silver, barite, dyscrasite, and nickeline are all associated minerals. Certain rocks found in the region are also known to contain arsenic (O'Neill, 1990):⁴

- Igneous rocks: < 1 to 15 mg/kg,
- Sandstone and limestone: < 1 to 20 mg/kg, and
- Argillaceous sedimentary rocks (e.g., shales, mudstone and slates): up to 900 mg/kg.

Clay soils and soils with oxyhydroxides of iron and aluminium have a particular affinity for arsenic (Sadiq, 1997).⁵ The Argillaceous shales, common to the Peninsular Range, would be a source of the sediments (and arsenic) that comprise the soil at former MCAS El Toro. The

⁴ O'Neill P (1990) Arsenic. In: Alloway BJ ed. Heavy metals in soils. Glasgow, Blackie and Sons, pp 83-99.

⁵ Sadiq M (1997) Arsenic chemistry in soils: an overview of thermodynamic predictions and field observations. Water Air Soil Pollut, 93: 117-136.

variability of reported arsenic concentrations at PRLs 605 and 606 are indicative of the distribution and influence of arsenic containing minerals.

Site Background Determination. The use of a 95th quantile to determine if concentrations in individual samples are above background is conservative and tends to error on finding concentrations above background when in fact the population of data are not above background. Therefore, the finding of a single sample above background, especially when the duplicate is virtually the same as the background screening level, is not unexpected given the high natural variability of metals concentrations in soil.

Arsenic Background Risk. Using the 95th quantile concentration (6.86 mg/kg) to estimate the potential health hazards associated with background concentrations of arsenic results in an excess cancer risk of 1.1×10^{-4} and a health hazard index of 2.6 due to arsenic, iron, and vanadium. The health hazard represented by these numbers would not be affected by any removal action as they are representative of background conditions at the site, which CERCLA cannot address. Furthermore, these numbers are also representative of the background health hazard in the surrounding areas; reducing perceived risk at this location will have no impact on these other areas.

Potential Release Scenarios: The smelting of non-ferrous metals and the production of energy from fossil fuel are the two major industrial processes that lead to anthropogenic arsenic contamination of air, water and soil. Other sources of contamination are the manufacture and use of arsenical pesticides and wood preservatives. Application of arsenical pesticides could result in arsenic concentrations in soil in the range of 100 mg/kg to 200 mg/kg, although much higher values have been recorded. Arsenic is also present in the rock phosphate used to manufacture fertilizers and detergents.

The reported arsenic concentrations are not consistent with an anthropogenic release, which would have a more uniform distribution. Based on an extensive review of site history and operations, the Navy could not identify a probable release scenario that would result in an anthropogenic release of arsenic without the presence of any other COPCs.

PRL 605. There is enough data to reliably indicate that a release of arsenic has not occurred at PRL 605; this finding is consistent with site history and use.

- (1) Three of the four soil samples are below the 95th quantile in the background dataset (6.86 mg/kg).
- (2) The sample with a reported concentration of 29.8 mg/kg also had a laboratory duplicate sample with a reported concentration of 7 mg/kg, providing a relative percent difference (RPD) of 123.9%. This RPD is outside the typical expectation of <50%. This discrepancy does not necessarily affect the validity of the data but does indicate a situation that is different or unusual. These findings are consistent with the probable scenario that a small crystal, rich in arsenic, was present in one of the aliquots from this sample location. This phenomenon is not uncommon in soil types from this region.
- (3) The disparity between reported sample concentrations and the absence of other COPCs/evidence does not support a finding that a release governed under CERCLA occurred (iron and vanadium concentrations are within their respective background datasets).

- (4) A localized arsenic concentration does not present a significant threat to human health and/or the environment.

PRL 606. There is enough data to reliably indicate that a release of arsenic has not occurred at PRL606; this finding is consistent with site history and use.

- (1) The sample with a reported concentration of 11.1 mg/kg is consistent with the background dataset.
- (2) The sample with a reported concentration of 11.1 mg/kg does not itself does not raise concerns of a potential release, given the limitations of the background dataset.
- (3) The absence of other COPCs/evidence does not support a finding that a release governed under CERCLA occurred (iron and vanadium concentrations are within their respective background datasets).
- (4) A localized arsenic concentration does not present a significant threat to human health and/or the environment.

Proposed Future Actions Concerning Arsenic at PRLs 605 and 606. Based on the above information: (1) the arsenic is not governed under CERCLA as it related to background (2) there is no evidence of a release that would be governed under CERCLA, and (3) the arsenic does not present a significant threat to human health and/or the environment (relative to background); therefore, further action is not required.



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03/14/2006 06:03 PM

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bcc

Subject MCAS El Toro PRLs: 296, 297, 605, 606

Dear fellow BCT members:

Attached is the Navy's official response to the DTSC comment letter (dated 3 February 2006) regarding the subject PRLs. Hardcopies of the Navy's response will follow in the mail.

If you have any questions, please call me at your convenience.

Thanks,
Rich

-----Original Message-----

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Subject: PRLs: 296, 297, 605, 606

BCT,
DTSC has reviewed the response to our comments on group 3 PRLs. We do not agree with the above four PRLs in this report and can not give NFI concurrence on them. To reiterate our position, we do not concur with the site characterization of these PRLs. Please consult DTSC on additional sampling location if planned.

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PRL DTSC RTC encl1.PDF PRL DTSC RTC ltr.pdf PRL DTSC RTC encl2.pdf